

REMARKS

IN THE SPECIFICATION

Applicants have amended the specification as requested by the Examiner on page 7, line 6, to refer to the referenced U.S. patent application by serial number.

Claim Rejections Under 35 U.S.C. § 103

The PTO has rejected claims 8-25 under 35 U.S.C. § 103(a) as being unpatentable over WO 98/03731 to *Finlayson et al.* in view of WO 99/05361 to *Allen et al.* *Finlayson et al.* is said by the PTO to teach all that is claimed in the present application except for the claimed anionic polymer. *Allen et al.* is said to teach the use of an anionic polymer as a dry strength additive. When combined, the two references are said by the PTO to render obvious claims 8-25.

In greater detail, *Finlayson et al.* is noted by the PTO to teach internally sizing paper with a polymer, such as an ethylenically unsaturated hydrocarbon, combined with both an ethylenically unsaturated carboxylic acid having at least one double bond and an alkene. Furthermore, *Finlayson et al.* is said by the PTO to teach retention aids, such as Kymene® 557, and that dry strengthening agents may be added to the paper mix. *Allen et al.* is said to teach a dry strength additive including a cationic component and an anionic component. The PTO further notes that using the dry strength agent taught by *Allen et al.* for the dry strength agent as suggested by *Finlayson et al.* would have been obvious to one of ordinary skill in the art. Thus, the PTO has held that one of ordinary skill in the art would have a reasonable expectation of success when adding the dry strength agent taught by *Allen et al.* to a paper mix as suggested by *Finlayson et al.*

The determination of obviousness under 35 U.S.C. § 103 is a legal conclusion based on factual evidence. To support a conclusion of obviousness, "either the references must expressly or impliedly suggest the claimed combination or the [PTO] must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." *Ex parte Clapp*, 227 U.S.P.Q. 972, 973 (Bd. Pat. App. & Int. 1985). In evaluating obviousness, the Federal Circuit made it very clear that one must look to see if "the prior art would have suggested to one of ordinary skill in the art that this process should be carried out and would have had a reasonable likelihood of success viewed in light of the prior art." *In re Dow Chemical Co. v. American Cyanamid Co.*, 837 F.2d 469, 473, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988). Both the suggestion and the expectation of success must be founded in the prior art, not in the applicant's disclosure." *Id.*

Applicants respectfully assert that the combined references fail to teach or suggest the claimed components of the present application. Specifically, the prior art fails to provide any motivation for combining the two cited references. *Allen et al.* is said by the PTO to teach a dry strength additive including a cationic component and an anionic component. *Finlayson et al.* is said by the PTO to state that dry strength additives may be added. However, the PTO has failed to provide any suggestion or motivation from the cited references as to why one of ordinary skill in the art would want to add the *Allen et al.* dry strength additive including a cationic component and an anionic component to that taught in *Finlayson et al.* The only explanation provided by the PTO is that one would have reasonable expectation of success if the dry strength agent taught by *Allen et al.* is used as a dry strength agent as suggested by *Finlayson et al.*

Applicants contend that one of ordinary skill would not be motivated to add an anionic dry strength agent to that taught in *Finlayson et al.* Applicants essentially claim a fibrous sheet

formed from a resin, latex and an anionic polymer. The latex is combined with the cationic resin such that the latex functions as a flexing component that hinders the crosslinking of the cationic resin. The addition of an anionic polymer then adds a negative charge to the fibrous slurry which aids in the formation of a complex which imparts both durability and strength to the finished fibrous sheet. One of ordinary skill in the art would not have a reasonable expectation of success since the prior fails to teach or suggest that adding an anionic polymer can form such a complex that imparts the desired characteristics as disclosed in the present application. The only motivation for adding an anionic polymer to such a mix can only be found in Applicants' disclosure. One of ordinary skill in the art would not have expected such success.

Furthermore, *Finlayson et al.* teaches away from adding an anionic dry strength additive to its disclosed method of internally sizing a cellulosic article. *Finlayson et al.* states that dry additives can only be added so long as the additives do not nullify the sizing effect of the interpolymer. Page 14, lines 8-10. Applicants contend that *Finlayson et al.* teaches that the inclusion of an anionic component would nullify the sizing effect of the interpolymer, thus *Finlayson et al.* teaches away from the inclusion of an anionic dry strength component.

Finlayson et al. teaches that the advantage of the present invention is the high filler receptivity observed from sizing agents based on an inorganic cation neutralizing material. Page 14, lines 22-24. Furthermore, *Finlayson et al.* states that the improvement of the present invention comprises employing an inorganic cationic compound as at least one neutralizing cationic compound. Additionally, *Finlayson et al.* states that an advantage of employing the inorganic neutralizing cationic compounds (rather than the, for example, organic ammoniated systems) to render the sizing interpolymer water-dispersible will result in dispersions that are less sensitive to dilutions with hard water such as, for example, ordinary tap water. Thus, the

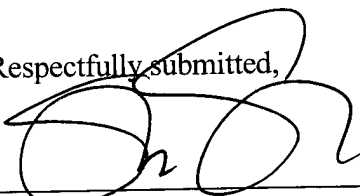
addition of an anionic dry strength additive would interfere with the dispersibility of the sizing interpolymers and would detract from the amount of sizing dispersed in the water, resulting in reducing the amount of sizing retained in the cellulosic product. As stated in *Finlayson et al.*, the degree of sizing obtained is controlled by the amount of solid interpolymers that is retained in the cellulosic. Thus, the addition of an anionic polymer would decrease the amount of sizing retained in the cellulosic product and thus decrease the amount resistance to the penetration of liquids obtained by the *Finlayson et al.* process. Thus, one of ordinary skill in the art would not be motivated to combine that which is taught in *Allen et al.* with that taught in *Finlayson et al.*, since *Finlayson et al.* teaches away from the inclusion of such anionic polymers.

Applicants respectfully contend that the combined art fails to teach or suggest that which is claimed in claims 8-25. Specifically, there has not been shown a reasonable expectation of success outside of that taught in Applicants' own disclosure and that the primary reference, *Finlayson et al.*, actually teaches away from the inclusion of an anionic polymer dry strength agent.

Thus, Applicants respectfully submit that claims 8-25 of the present application are believed to be in a condition for allowance and an early notice to such effect is earnestly solicited.

12/23/02
Date

Respectfully submitted,



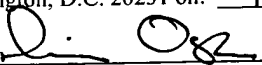
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APPENDIX

Replace lines 1-7 on page 7 with the following substitute paragraph:

The resin system comprises a mixture of a polyamidoamine-epihalohydrin and a component which cooperates with or moderates its properties and may be selected from flexibilizing components. Without wishing to be bound by any one theory, it is believed that the flexibilizing component functions to hinder crosslinking of the polyamidoamine-epihalohydrin. Such a resin system is described in more detail in U.S. Patent Application No. [[Attorney Docket No. P19657.S07]] 09/613,529 and is incorporated by reference as though set forth in full within this application.